

THE PTERIDOPHYTA OF MARION ISLAND

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(With Plate XXXIV)

During a visit to Marion Island (46° 52' S. lat., 37° 45' E. long.) from December 1951 to April 1952, a general collection of plants was made by Mr. R. W. Rand (Rand, 1954). The pteridophytes of this collection form the basis of the present paper. The Hepaticae from the Rand collection were described by Arnell (1953) and a completed treatment of the mosses awaits publication.

The affinities of the fern flora of Marion Island appear to be mainly with species now found in South America, often ranging through the subantarctic islands. Two alternative means of migration could be postulated to explain this distribution pattern. The older authors favoured distribution of the spores by the high winds of these latitudes but some more recent authorities (e.g. Copeland 1939) have regarded these ferns as being derived from a former antarctic flora. Hooker (1847) favoured a past land connection.

If the former were true, it might be expected that the subantarctic islands would show a progressively poorer flora with a larger proportion of ferns going east from Fuegia and that eventually the fern species would tend to disappear eastwards. The actual pattern is less regular. The new *Elaphoglossum* described in this paper is very near to an Andean species and no corresponding plant is known from the other subantarctic islands.

LYCOPODIACEAE

Lycopodium magellanicum Sw.

Marion Island: *Rand* 3273 (BM, BOL), 3692 (BM, BOL), 3274, 3307, 3371, 3555, 3688 (BOL).

Lycopodium saururus Lam.

Marion Island: *Rand* 3405 (BM, BOL).

HYMENOPHYLLACEAE**Hymenophyllum peltatum** (Poir.) Desv.Marion Island: *Rand* 3285 (BM, BOL), 3767 (BM, BOL), 3283, 3518, 3558, 3565, 3777a (BOL).

This name is used here in the broad sense.

POLYPODIACEAE Subf. Blechnoideae.**Blechnum penna-marina** (Poir.) Kuhn.Marion Island: *Rand* 3269 (BM, BOL), 3369, 3520, 3557, 3609 (BOL).**POLYPODIACEAE** Subf. Dryopterideae**Polystichum marionense** Alston and Schelpe sp. nov.*Aspidium mohrioides* sensu Hemsl. Rep. Voy. Challenger I: 195 (1885) non Bory.

Rhizomate crasso, suberecto, apice squamosissimo, squamis lanceolatis (vel superioribus lineatis), concoloribus; frondibus fasciculatis, 30 cm. longis, 3.5 cm. latis, stipite circa 15 cm. longo, 1.5—2.5 mm. crasso, siccitate pallide fulvido, sparse squamis caducis induto, aliter glabro; laminis circa 15 cm. longis, ambitu anguste oblongo-linearibus, bipinnatifidis vel bipinnatis, pinnis breviter petiolulatis, rotundato-trapezoideis subcoriaceis (sed juvenute membranaceis et brevissime mucronulatis), segmentis superioribus ad alam angustiam incis, segmentis apicalibus confluentibus; nervis pallidioribus, stomatibus occultis; indusiis non visis probabiliter caducis; sporis monoletis, oblongis, crebre rugosis, circa 54 μ longis. (Plate XXXIV, Fig. 1a.)

Marion Island: *Moseley s.n.* Dec. 1873 (BM; holotype); *Rand* 3192 (BM, BOL), 3690 (BM, BOL), 3653, 3720, 3766 (BOL) (paratypes).

This species belongs to the same group as *P. mohrioides* (Bory) Presl, which is found in the Falkland Islands, and is represented by allied species, sometimes considered varieties, in the Andes of Patagonia and South Georgia (*P. plicatum* (Poeppig) Hicken), the Andes of Chile and Argentina (*P. elegans* Remy), the mountains of the western United States (*P. scopulinum* (Eaton) Maxon and *P. lemmoni* Underw.) and New Zealand and the Auckland Islands (*P. cystostegia* (Hook.) Armstr.). The plant from Marion Island is perhaps nearest to *P. lemmoni*, which has similar concolorous scales, but has conspicuous stomata on the lower surface. A plant identified as *P. mohrioides* has been reported from Amsterdam Island (*De l'Isle s.n.*) by Hemsley (1885, p. 273), and an undescribed species has recently been received from the Crozet Islands.

Copeland (1939, p. 181) called *P. mohrioides* in the broad sense "a



PLATE XXXIV. *Polystichum marionense* Alston & Schelpe. Photograph of *Rand 3192* (BOL); paratype.
(Approximately $\frac{6}{10}$ natural size).



FIG. 1.—*Polystichum marionense*. a. Pinna ($\times 3$). *Elaphoglossum randii*. b. Whole plant ($\times 1$); c. Fertile lamina, undersurface ($\times 1$).

typical survivor of the Antarctic flora", and states that "the case for an Antarctic origin of *Polystichum* is so clear that the evidence has long been familiar, even to those hesitant to draw the obvious conclusion".

POLYPODIACEAE

Polypodium magellanicum (Desv.) Copel.

Marion Island: *Rand* 3287 (BM, BOL), 3235, 3517, 3559, 3566 (BOL).

POLYPODIACEAE Subfam. Elaphoglossoideae

Elaphoglossum randii Alston & Schelpe sp. nov.

Rhizomate horizontali tenui, vix 1 mm. usque ad 2 mm. crasso, repente vel plus-minusve ascendente, in sicco nigrescente, paleis atro-castaneis, nitentibus, subulatis, 2.5 mm. longis, 0.75 mm. latis, firmis, laxe appressis, margine dentatis, cellulis c. 32 longis, 8 latis, opacis vel marginem versus transparentibus. Frondibus subapproximatis, biserialibus, basi articulatis, stipitibus in sicco brunneis, basi obscurioribus, paleaceis, paleis iis foliorum similibus, 2.5—7.0 cm. longis; laminis foliorum sterilium 2.0—2.5 cm. longis, 0.75—1.0 cm. latis, ovato-oblongis, basi cuneatis, apice obtusis, plerumque involutis, coriaceis, supra in juventute crebre imbricato-paleaceis, vetustioribus tarde glabrescentibus, subtus glabris, pallidioribus, nervis parallelis, bifurcis ad marginem non attingentibus; laminis fertilibus stipitibus longioribus, supra crebre paleaceis, subtus omnino sporangiferis; squamis petiolorum oblongo-ovatis, 1.5 mm. longis, 0.6 mm. latis, basi peltatis, apice leviter attenuatis, bicoloribus, eorum partibus centralibus opacis, brunneis, oblongis, eorum marginibus hyalinis, irregularibus; squamis foliorum pallidioribus; annulorum cellulis 12; sporis monoletis, oblongis, alato-rugosis, c. 43 μ longis. (Fig. 1 b, c.)

Marion Island: *Rand* 3710 (BM, type; BOL, isotype), 3514, 3515, 3691 (BOL; paratypes).

The species is very closely related to *E. hartwegii* (Fée) Moore, an Andean species which is taller and has a stouter rhizome and larger rhizome scales. Another allied species is *E. fonkii* (Phil.) Moore, a little known species from Chile. *E. insulare* C. Chr. from Tristan d'Acunha is less coriaceous with concolorous scales, and does not seem to be closely allied to *E. randii*.

SUMMARY

Two Lycopodia and five species of ferns are recorded from Marion Island. *Polystichum marionense* and *Elaphoglossum randii* are described as new and their affinities are discussed.

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